

# **COMMUNICABLE DISEASES IN SCHOOL SETTINGS**

## ***ESSENTIAL GUIDELINES FOR SCHOOL NURSES AND PERSONNEL***

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## Table of Contents

COMMUNICABLE DISEASES IN SCHOOLS .....	3
WHEN A COMMUNICABLE DISEASE IS DIAGNOSED OR SUSPECTED .....	4
EXCLUSION GUIDELINES .....	5
REPORTING REQUIREMENTS .....	7
ROUTES OF TRANSMISSION .....	8
DROPLET TRANSMISSION .....	8
AIRBORNE TRANSMISSION.....	8
CONTACT TRANSMISSION .....	8
PREVENTION & CONTROL OF COMMUNICABLE DISEASES IN SCHOOLS .....	11
HAND HYGIENE .....	11
<b>HANDWASHING</b> .....	11
RESPIRATORY ETIQUETTE .....	12
IMMUNIZATIONS & ANTIBIOTIC USAGE.....	13
FOOD SAFETY .....	14
THE SCHOOL ENVIRONMENT .....	15
HAND SANITIZING .....	15
ANIMALS & PETS AT SCHOOL.....	16
MUSICAL INSTRUMENTS .....	17
SPORTS & ATHLETICS .....	18
SPECIAL GROUPS SUSCEPTIBLE TO INFECTION .....	19
SYMPTOMS OF ILLNESS .....	21
SYMPTOMS OF CONCERN .....	21
Table I: Common symptoms in ill children. ....	22
Common cold.....	22
Conjunctivitis.....	22
(pinkeye) .....	22
Cough.....	22
RASHES .....	25
Table II: Infectious diseases that can cause rashes in children. ....	26
Table III: Images of common rashes in children. ....	28
OUTBREAKS & SPECIAL CASES UNIQUE TO THE SCHOOL ENVIRONMENT .....	33
OUTBREAKS.....	33
HEAD LICE.....	33
PINWORMS .....	34
CONJUNCTIVITIS .....	35
SCABIES .....	36
NOROVIRUS .....	37
SPECIAL CASES .....	37
HUMAN BITING INCIDENTS.....	38

## COMMUNICABLE DISEASES IN SCHOOLS

Communicable diseases may be caused by numerous different micro-organisms such as bacteria, viruses, fungi, parasites and prions. These diseases can be common occurrences in school-age children due to the close proximity of children and adults in schools and childcare centers. The prevention and control of the spread of communicable diseases is a particular concern in these settings and should be a priority.

Exposure to a variety of communicable diseases in a school population is inevitable. This manual provides information to school personnel regarding the identification of common diseases and their modes of transmission, to determine appropriate actions for ill students and staff, and to control the spread of disease within the school. Most cases of illness are **sporadic**, but occasionally an **outbreak** of a particular illness can occur in a school. **Suspected outbreaks and cases of reportable communicable diseases should be reported to the Louisiana Office of Public Health immediately.**

To determine the likelihood that an infection in one or more students will pose a risk for others, a school nurse should have an understanding of the following:

- The mechanism by which an agent is spread (*transmission route*)
- The ease with which an agent is spread (*contagion* or *communicability*)
- The likelihood that other students are immune (*either due to immunization or prior infection*)

Guidelines included in this manual are intended to assist school personnel in their efforts to preserve and protect the health of both students and employees, and are based upon current health information as of April, 2013. Recommendations for handling infectious disease issues in schools may change as new information becomes available.

The Infectious Disease Epidemiology Program at the Louisiana Office of Public Health is available to assist school nurses and personnel when infectious disease issues arise and can be reached at (504) 568-8313 or (800) 256-2748.

In any school population, there are some individuals who may have a higher risk of complications if affected by specific illnesses. For example, students and staff with immunodeficiencies, chronic disease, or that are pregnant are at higher risk for some diseases than are the general population. As such, disease control guidelines for at-risk populations may be different than the guidelines presented in this document. When an at-risk individual has an infectious disease or is exposed to another student with an infectious disease, the school nurse or other health care provider should be consulted. The Office of Public Health is also available for consultation.

An electronic downloadable version of “Communicable Diseases in School Settings: Essential Guidelines for School Nurses” can be accessed on the Office of Public Health’s website at <http://dhh.louisiana.gov/index.cfm/page/299>

## WHEN A COMMUNICABLE DISEASE IS DIAGNOSED OR SUSPECTED

- As soon as possible, *separate* the ill child from well children at the facility until he/she can be relocated to either their home, or a healthcare facility.
- *Notify* parents/guardians immediately so that medical advice and treatment can be sought.
- *Adhere* to the exclusion and readmission recommendations provided on **Pages 6 - 7**.
- *Inform* parents/guardians of exposed children about the illness as necessary and advise them to watch their children for signs and symptoms of the disease.
- *Closely observe* the appearance and behavior of exposed children and *be alert* to the onset of illness.
- *Implement* strategies to prevent the spread of communicable diseases and utilize sanitizing procedures:
  - Encourage children and staff to take extra precautions with hand washing, food handling, and general cleanliness in the school environment.
  - In the event that an object or surface has been soiled with any bodily excretions (such as nasal discharge or saliva, immediately wash, rinse, or sanitize the soiled object or surface. Sanitize diaper-changing tables, toilets, and potty chairs after each use. See **Page 16** for more detailed information on cleaning and sanitizing in the school environment. Use special procedures for contamination by blood and internal body fluids.

## EXCLUSION GUIDELINES

School attendance is important for students and therefore any unnecessary barriers to attending school should be minimized. Exclusion of ill students, as well as staff, from the school setting is to be considered only when exclusion can improve the student's health and well-being, as well as reduce the spread of infectious agents and likelihood of secondary cases.

**“Exclusion” refers to the prohibition of the usage of school facilities and grounds, whether for school activities or not, and attendance at all school activities.**

The decision to exclude students with an infectious disease from school should be made in conjunction with the school nurse, the Office of Public Health, health care providers, or the parents/guardians. These guidelines contain exclusion recommendations for most infectious diseases commonly occurring in school settings.

**General conditions for exclusion of children from the school setting are as following:**

- 1) The student has a high fever, behavioral changes, persistent crying, difficulty breathing, uncontrolled coughing, lethargy, diarrhea or stools with blood or a high quantity of mucus, vomiting more than two times within 24 hours, or any other signs or symptoms that may indicate a severe illness.
- 2) The student is not able to participate comfortably in regular activities due to his/her illness.
- 3) The student requires more care than the school staff are able to provide without compromising the health and safety of other students.
- 4) The student is ill with a potentially contagious illness and exclusion is recommended by a health care provider, or the Office of Public Health.
- 5) The student is no longer contagious but might remain excluded until any visible or overt symptoms have subsided. For example, a student may remain excluded until a noticeable rash/sore/discharge has been resolved, or loud coughing from a respiratory infection has subsided. This guideline is in consideration and respect for the social and psychological health of the ill student, and to reduce any anxiety and anguish among fellow students, staff and parents/guardians thereby reducing any disruption within the school.

Students should be allowed to return to school once their symptoms have subsided or if a health care provider determines the illness is no longer communicable, provided that the child can participate in routine school activities.

In cases where unvaccinated students and school staff are exposed to a vaccine preventable disease (such as measles, mumps, rubella, pertussis and others), the Office of Public Health should be consulted in order to determine if exclusion of unvaccinated students is necessary.

Occasionally school staff may become ill with a communicable disease. When this occurs, the affected staff member should consult with the school nurse, school administration, the Office of Public Health, or a health care provider to determine if he/she is allowed to work. If ill with diarrhea or vomiting, the staff member should not work until his/her symptoms have subsided or if a health care provider determines the illness is not communicable. This is especially important for staff that work in the cafeteria, or handle food in any manner.

In cases in which a student or a school staff member does not have a diagnosed disease/condition, but has signs or symptoms strongly suggestive of a communicable disease, exclusion may also be warranted.

# REPORTING REQUIREMENTS

Louisiana law requires persons treating or having knowledge of a **reportable disease**, whether the disease is suspected or confirmed, to report the case to the Office of Public Health. In most cases, health care providers or laboratories report diseases. Under certain circumstances, when a student is **suspected** of having a serious infectious disease that is reportable or when **an outbreak occurs**, school nurses and personnel must report the event immediately.

The list of reportable diseases and conditions can be found at:

<http://dhh.louisiana.gov/index.cfm/page/1013>

**To report a disease or outbreak, call the Infectious Disease Epidemiology Section at  
(504) 568-8313 or (800) 256-2748  
Available 24 hours, 7 days a week**

In regards to confidentiality, the Family Educational Rights and Privacy Act (FERPA) and Health Insurance Portability and Accountability Act (HIPAA) prohibit the disclosure of health-related information except in certain well-defined circumstances. Reporting to public health is one of these exceptions.

**Notifying the Office of Public Health of a reportable disease does not breach confidentiality laws.**

When a case is reported, the Office of Public Health may conduct a case investigation to confirm the diagnosis, treatment, and cause of illness, in addition to determining and implementing any appropriate methods of disease control. In an outbreak situation, the goal of the Office of Public Health is to assist the school in preventing further spread of the illness and to try to determine the cause of the outbreak.

**Any outbreaks, including foodborne outbreaks, must be reported to the Office of Public Health immediately.**

**To the extent that it is available, the following information should be reported:**

- **diagnosis**
- **patient's name**
- **date of birth**
- **sex**
- **address and phone number of the person with a communicable disease**
- **name, address and contact info of the responsible health care provider**
- **pertinent laboratory test results (if available)**

# ROUTES OF TRANSMISSION

Communicable diseases can be spread in a variety of ways, referred to as *transmission routes*. These transmission routes can be grouped into three major forms: droplet, airborne and contact.

## **DROPLET TRANSMISSION**

Infections with respiratory tract symptoms (including, for example, runny nose, cough, or sore throat) are often spread by large *droplets* containing viruses.

Droplets are generated during coughing, sneezing, talking or singing. These “large” droplets travel less than three feet before falling to the ground and do not remain suspended in the air. Before falling to the ground, droplets may be deposited on the mucous membranes of the eye, nose, or mouth of another person within three feet, resulting in transmission of infection. Droplets may also be implicated in contact transmission (see below).

Some of the infections passed in this way are whooping cough (pertussis), mumps and rubella.

## **AIRBORNE TRANSMISSION**

*Airborne* transmission occurs when an infected person coughs, talks or sings and aerosolizes very small particles (called droplet nuclei) containing viruses or bacteria. These droplet nuclei remain suspended in the air for long periods, and can be widely dispersed by air currents over large distances. When another person inhales these small particles, he/she will be infected and potentially become ill.

Some of the infections passed in this way include tuberculosis, measles and varicella. Some of these same infections may also be transmitted by droplet and contact transmission, such as measles and chickenpox. Tuberculosis can only be transmitted by droplet nuclei.

## **CONTACT TRANSMISSION**

Many infections can be spread by *direct* or *indirect* contact. *Direct contact* transmission occurs when the skin, mucous membranes or any discharges of an infected person come into direct contact with the skin or mucous membranes of an uninfected person, leading to the transmission of the infection.

Examples of infections spread by *direct skin-to-skin contact* with an infected person include ringworm, warts (verrucae), scabies and chickenpox. Examples of infections spread by *direct contact with mucous membranes* include shingles, herpes simplex, and most sexually transmitted infections.

*Indirect contact* can occur when objects become contaminated with infectious discharges. When other persons come in contact with these objects and then touch their skin or the mucous membranes of the eyes, nose, or mouth, they can then become infected. This type of transmission route is particularly common in school settings.



Examples of infections spread by *indirect contact* with fomites include respiratory syncytial virus (RSV), conjunctivitis (pink eye), and chickenpox.

It should be noted that many infections can be spread by both direct and indirect contact and via both the skin and the mucous membranes.

There are several different forms of contact transmission, including **fecal-oral**, **blood and body fluids**, **vector-borne** and **zoonotic** transmission; they are described in greater detail below.

### **Fecal-Oral Transmission**

Intestinal tract infections are occasionally spread through the *oral ingestion* of viruses, bacteria, or parasites that can be found in the stool of an infected person, or animal. This type of transmission, known as fecal-oral transmission, occurs when objects contaminated with microscopic amounts of human or animal feces are inadvertently placed in the mouth. In school settings, the sites most frequently contaminated with feces are hands, classroom floors, faucet handles, toilet flush handles, toys and tabletops. Fecal-oral transmission can also occur when food, or water contaminated with microscopic amounts of human, or animal feces is ingested.

Organisms that cause enteric infections that are commonly spread by this transmission route include *Campylobacter*, *Cryptosporidium*, *E. coli* O157:H7, *Salmonella*, *Shigella*, *Giardia*, hepatitis A and E viruses, norovirus, and a number of other intestinal viruses and parasites. Other organisms that cause non-enteric infections may also spread through the stool of an infected person, such as hand, foot, and mouth disease (HFMD), and viral meningitis. Vomit is rarely implicated in the spread of enteric infections, although rotavirus and norovirus are two notable exceptions.

### **Blood & Body Fluids Transmission**

Some infections may occur when an infected person's blood or body fluids come in direct contact with damaged, non-intact skin or mucous membranes. Examples of body fluids implicated in this form of disease transmission include blood, spinal, pericardial, seminal and cervical fluids. This type of transmission is very rare in school settings.

Infections such as hepatitis B, hepatitis C, and the human immunodeficiency virus (HIV) can be spread by contact with blood and body fluids.

Seminal and cervical fluids may also transmit *sexually transmitted diseases* (STDs) as a result of *sexual contact*, including genital-to-genital, oral-to-genital, or genital-to-anal contact. Though this type of transmission is less common within school settings, there are situations in which a school/childcare nurse or school staff member may be confronted with an infection in a school-age child. The possibility of sexual abuse must be considered when infections occur in prepubescent children and must be reported to appropriate authorities.

Infections such as HIV/AIDS, genital herpes, genital warts, gonorrhea, syphilis, and chlamydia are examples of sexual transmission.

### **Vector-borne Transmission**

Many infections are transmitted to humans through *vectors*, however this type of transmission is very rare within school settings. “Vector” is a term broadly used to refer to any animal or blood-sucking arthropod (mosquito, tick, lice, etc.) that transmits a pathogen or plays an essential role in the pathogen’s life cycle. Generally, a vector becomes infected with an infection-causing virus, bacterium or parasite and then transmits that agent through feeding activity to a human or other animal causing a “vector-borne disease.”

Anopheline mosquitoes - malaria, blacklegged ticks - Lyme disease, and triatomine kissing bugs - Chagas disease are all examples of vectors and the infections they may transmit.

### **Zoonotic Transmission**

Many infections can be transmitted from animals to humans, though this type of transmission is very rare within school settings. Infections may be through direct contact with the secretions or excretions from an infected animal, from its bite, contact with its food or water, or from contact with the organisms that share the animal’s environment.

Examples of infections that can be spread by zoonotic transmission include salmonellosis from reptiles and amphibians, ringworm from cats, and rabies from bats.

# PREVENTION & CONTROL OF COMMUNICABLE DISEASES IN SCHOOLS

## HAND HYGIENE

### HANDWASHING

Good hand hygiene is the most effective way to stop the spread of disease-causing germs and handwashing is one of the best techniques for preventing and controlling the transmission of infection. All students and staff should regularly perform effective handwashing, which will reduce the amount of infection spread in schools.

**Always remind students and staff that hand washing will stop the spread of pathogenic germs which might cause disease.**

### HANDWASHING TECHNIQUE

- Wash hands for at least **10-15 SECONDS**.
- Use **SOAP** and warm **RUNNING WATER**.
- **RUB** hands vigorously as you wash them.
- **WASH ALL** surfaces including the backs of hands, wrists, between fingers and under fingernails.
- **RINSE** hands well.
- **DRY** hands with a paper towel or air dryer.
- If using paper towels, turn off the water using a **PAPER TOWEL** instead of bare hands.

### WHEN TO WASH YOUR HANDS

- Upon arrival for the day or when moving from one childcare group to another
- After coughing, sneezing, wiping your nose, and cleaning up messes
- After using the toilet
- Before and after providing assistance to another person using the toilet
- After cleaning potentially contaminated surfaces
- Before eating or drinking
- After handling animals
- Whenever hands are dirty or soiled
- Food handlers should wash hands before handling food and when hands are soiled.
- Staff should assist students who are unable to wash their own hands.

### USE OF ALCOHOL-BASED HAND RUBS

Sanitizing alcohol-based hand rubs (liquid, gel or foam hand sanitizers) have increased in popularity as they can provide an effective and convenient alternate solution to hand hygiene in school. Instant alcohol-based sanitizing hand rubs can be used during the day if it is more convenient and hands are free of any visible soil. School staff should closely supervise the use of these products by young children and should be safely stored out of reach of children.

## **TEACHING HANDWASHING**

Children often learn by watching adults. Young children are often unaware of washing their hands properly and it is important for school staff to know and practice good handwashing techniques. This will ensure that they can show students the proper techniques in addition to telling them.

## **RESPIRATORY ETIQUETTE**

Respiratory infections can be spread from coughs or sneezes. Make sure tissues are available in all classrooms. Students and staff should cover their mouths when coughing and use a tissue when sneezing or blowing their noses. Tissues should be thrown away immediately, followed by proper hand washing. Alcohol-based hand gels may be used in the classrooms to minimize disruption. If a tissue is unavailable, coughing or sneezing into the crook of the elbow or into one's upper sleeve instead of the hands will also reduce the risk of infection transmission and contamination of objects within the school.

Any student, teacher, or staff member suspected of having a respiratory illness should not attend school. Ill students must be excluded from sports activities, choir or any activities that may involve close social contact, since transmission of a respiratory disease is expedited in such situations.

School buses may allow for easy spread of respiratory disease, owing to their small, enclosed space. Tissues should be available on the buses, and students should be encouraged to cover their nose and mouth while coughing or sneezing. If possible, commonly handled interior surfaces (i.e. door handles and hand rails) should be disinfected between transferring loads of students.

Because of the possible risk of developing Reye's syndrome do NOT give aspirin or salicylate containing medicines to a child or teenager who has an acute respiratory disease.

### **Always remind students and staff to:**

1. **Cover their nose and mouth** with a tissue or with the crook of their elbow when they cough or sneeze.
2. **Wash their hands often with soap and water**, especially after they cough or sneeze. If water is not near, use an alcohol-based hand cleaner.
3. **Remind them not to touch their eyes, nose or mouth.** Germs are often spread this way.

## **IMMUNIZATIONS & ANTIBIOTIC USAGE**

### **CHILDHOOD IMMUNIZATIONS**

Immunizations are a vital tool for the prevention of severe diseases. State health regulations require by Louisiana law (R.S. 17:170) that students attending out-of-home school settings be up to date on all immunizations or have a valid exemption (either a medical, religious or philosophical exemption). Schools are responsible for documenting the immunization status of all students on file.

Required immunizations for children depend upon the level of education (e.g. pre-kindergarten, kindergarten and middle school).

**The schedule of LA. immunization requirements can be found at:**

<http://dhh.louisiana.gov/index.cfm/newsroom/detail/2200>

**The required immunizations for most children include:**

- Diphtheria
- *Haemophilus influenzae* type B (Hib)
- Hepatitis B
- Measles
- Mumps
- Pertussis (whooping cough)
- Polio
- Rotavirus
- Rubella
- *Streptococcus pneumonia* (pneumococcal)
- Tetanus
- Varicella (chickenpox)

Vaccines for hepatitis A, influenza (flu) and meningococcal meningitis are strongly recommended but not required for school attendance. Students and staff, particularly those with medical conditions and who would like to reduce their risk of acquiring the flu, should consider getting an annual flu shot.

Information on vaccination programs for children administered by the Department of Health & Hospitals can be found at the following webpage: <http://dhh.louisiana.gov/index.cfm/page/547>

## **ADULT IMMUNIZATIONS**

It is strongly recommended that school personnel be vaccinated (or show laboratory evidence of immunity) against diphtheria, tetanus, mumps, measles, rubella (German measles), polio, and varicella (chickenpox). It is especially important for women of childbearing age to be immune to rubella as this infection can cause complications for the developing fetus.

## **APPROPRIATE ANTIBIOTIC USE**

Antibiotics are important to fight infections caused by bacteria. However, some bacteria have developed resistance to these drugs. This has occurred partially due to improper antibiotic use, through misuse and overuse. Antibiotic-resistant infections may be more difficult to treat and may result in more serious illness if not initially treated with appropriate antibiotics.

While antibiotics are used for treatment of **bacterial** infections, they are not effective and **should not be used with viral infections** like the common cold, most sore throats, and influenza.

## **FOOD SAFETY**

Foodborne illness is considered to be any infection that is related to food ingestion. Many different disease-causing microbes, or pathogens, can contaminate foods resulting in a variety of foodborne infections. The pathogen enters the body through the gastrointestinal tract via fecal-oral transmission, or through the direct consumption of contaminated food and drink. Gastrointestinal tract symptoms are the most common clinical manifestations of foodborne illnesses and typically include abdominal cramps with pain, nausea, vomiting, and diarrhea. In addition, poisonous chemicals or other harmful substances can cause foodborne diseases if they are present in food.

Foodborne illness is a serious public health problem. As of today, more than 250 different types of foodborne diseases have been described; most of these are attributed to pathogens. Every year in Louisiana, there are roughly 163,000 cases of foodborne illnesses with 1,000 people seeking hospitalization and 20 deaths. In addition to human suffering, an outbreak of foodborne illness associated with an institution can result in a damaged public reputation and significant financial loss.

**Food safety is the responsibility of every person who is involved in food service.**

Every action in food service has the potential to impact the safety of the food as foodborne illness can occur in any stage of operation: in the field, during purchasing, transportation, storage, preparation, holding, service or cleanup. To prevent a foodborne illness, good food safety habits should be maintained on a routine basis.

*Foodborne disease reporting* is also very important for disease prevention and control. Typically, the appropriate procedure for health care professionals to follow in reporting foodborne illnesses is to **contact the Office of Public Health whenever a specific notifiable foodborne disease is suspected.**

# THE SCHOOL ENVIRONMENT

## HAND SANITIZING

One of the most important steps in reducing the spread of infectious diseases in school settings among children and childcare providers is **cleaning** and **sanitizing** of surfaces that could possibly pose a risk to children or staff. **Cleaning** is the removal of adherent visible soil, dust or other foreign material by a manual or chemical process while **sanitizing** is the process that reduces the microbial population on a surface or object to a hygienically safe level.

Routine **cleaning** with detergent and water is the most useful method for removing germs from surfaces in school setting. However, some surfaces and objects require an additional step after cleaning to reduce the number of germs on a surface to a level that is unlikely to transmit an infection; this step is called **sanitizing**. For example, in classrooms with young children, toys should be cleaned and sanitized regularly, especially if the toys are soiled or placed in a child's mouth. Common areas, desks/tables, doorknobs and handles, phone receivers, and drinking fountains are examples of surfaces and objects that should be kept clean and periodically sanitized. The facility operations/custodial services staff are usually responsible for most of the cleaning that occurs in schools.

Most facility operations/custodial services have some type of sanitizing solution available. Generally, a diluted water solution of **unscented household chlorine bleach** is an appropriate sanitizer. Household bleach is effective, economical, convenient, and readily available; its dilution with water to produce a sanitizer is easy, nontoxic, safe if handled properly, and inactivates most infectious agents. However, it should be used with caution on metal or metallic surfaces. If bleach is found to be corrosive on certain materials, a different sanitizer may be required. When ordering household bleach, make sure that the bleach concentration is for household use, and not for industrial application. Household bleach is typically sold in retail stores in one of two strengths: 5.25% hypochlorite (regular strength bleach) or 6.00% hypochlorite (ultra strength bleach) solutions.

Sanitizer solutions can be applied in various ways:

- **Spray bottle** - for diaper changing surfaces, toilets, and potty chairs.
- **Cloths rinsed in sanitizing solution** - for food preparation areas, large toys, books, and activity centers.
- **Dipping the object into a container filled with the sanitizing solution** - for smaller toys.

For sanitizing procedures to be effective, proper instructions for that solution must be followed. Therefore, it is important to determine both the level of dilution of a sanitizer and the minimum contact time between the sanitizer and object. In general, it is best not to rinse off the sanitizer or wipe the object dry right away, as a sanitizer must be in contact with germs long enough to kill them.

For example, when a properly prepared solution of **bleach water** is used from a **spray bottle** to previously cleaned and rinsed surfaces, **the minimum contact time is two minutes**. For washed and rinsed dishes submerged in a container that is filled with properly prepared bleach solution, **the minimum contact time is one minute**.

## **ANIMALS & PETS AT SCHOOL**

Animals in the classroom can be a beneficial and edifying resource for learning in the classroom; however, the list of diseases that such “classroom pets” can transmit to humans is extensive. Infections may be through direct contact with an infected animal or its feces, through insects that bite or live on animals, and from contact with the organisms that share the animal’s environment.

As an example, turtles and other reptiles, amphibians, rodents and live poultry shed *Salmonella* bacteria in their feces without showing any evidence of illness. Estimations based on data from the Centers for Disease Control and Prevention (CDC) suggests that more than 1,000 annual infections of salmonellosis in Louisiana can be attributed to contact with reptiles and amphibians. Contamination of hands with feces following the handling of these types of animals or cleaning their cage/enclosure can create a pathway for infection transmission through the fecal-oral route.

In addition, animals can initiate an allergic or asthmatic reaction in susceptible children, introduce unpleasant odors in the classroom and inflict wounds in the form of scratches and bites. Some animals are simply inappropriate for the classroom or for the school environment - venomous and poisonous animals, including certain species of spiders, snakes and insects, as well as wild, stray, or aggressive animals should not be considered as a “classroom pet” nor enter the school facilities and grounds. “Exotic” or large animals are also strongly discouraged.

### **What are the best measures to prevent the spread of disease from animals?**

It is essential that school officials implement safeguards to protect the health and well-being of children who may be exposed to an animal as well as to ensure humane treatment of the animal(s) in question. To minimize the risk of students and staff acquiring an infectious disease from animals, these simple precautions should at least be taken:

- Identify any students that suffer from allergies or asthma that may be provoked by the presence of an animal prior to the introduction of a classroom pet.
- Do not introduce animals into the classroom that are known to commonly transmit infections. This includes reptiles and amphibians, as they are natural carriers of *Salmonella* bacteria. Psittacine birds, such as parrots, parakeets, budgies and cockatiels, are also a poor choice because of the spread of psittacosis.
- All animals should be inspected prior to entering the classroom, ideally by a licensed veterinarian, to ensure that they are clean and healthy to minimize the risk of disease transmission to students.
- An effort should be made to **minimize student handling of animals** and then only by those students of sufficient mental maturity to follow directions. Even very tame animals may react aggressively in strange situations or with large groups of people; therefore, student contact with animals should always be kept to a minimum and strictly supervised.
- Students and staff should be encouraged to always wash their hands after handling animals, after visiting places with animals (such as zoos or farms), and before eating. If possible, disposable vinyl gloves should be worn during animal contact.



- Students should never "kiss" animals or have them in close contact with or proximity to their faces.
- A "no fingers in the mouth" policy should be strictly followed.
- Human food should not be allowed in a room where animals are kept.
- Animal cages/enclosures should be kept clean and in good repair. If students assist in cleaning the cages/enclosures, they should be closely supervised and must wash their hands afterwards. It is generally recommended that students should not be involved in this process due to the likelihood of increased disease transmission.

## **MUSICAL INSTRUMENTS**

A large number of diseases can be spread through saliva and this can be a concern for students using shared musical instruments, particularly woodwind and brass instruments. A number of organisms, including yeasts and molds, can live for days within the interior chambers and pose an additional risk to student health. In the interests of infection control and protecting student health, both musical instruments and mouthpieces should be regularly sterilized or disinfected to prevent the spread of disease.

The method of *sterilization* destroys all form of life by using physical or chemical agents, such as heat or chemical vapor. *Cold disinfection* involves putting an object in a solution of a chemical agent and water to destroy most microorganisms. The fact that plastics cannot be heat sterilized and that equipment for sterilization is prohibitively expensive indicates that this method is generally not a sustainable option in schools. Cold disinfection, while not a substitute for sterilization, is a good alternative for most schools. This method should be employed regularly to disinfect shared musical instruments.

### **What are the best measures to prevent the spread of disease from musical instruments?**

To minimize the risk of students acquiring an infectious disease from the usage of musical instruments, these simple precautions should at least be taken:

- **Avoid sharing as much as possible.** Whenever possible, schools are encouraged to provide individual mouthpieces or instruments for students. When this is not feasible, students should be encouraged to purchase their own instruments or mouthpieces. When mouthpieces must be shared, they should be disinfected using a disinfectant method that will preserve the mouthpiece yet still be effective on the microbial agents of concern.
- **Reeds are never to be shared** and do not require sanitizing.
- Teach students how to clean their own instruments and how to empty and scrub clogged valves when needed.
- If instruments must be shared in class, cleaning solution should be available and its usage strongly encouraged.
- If instruments must be shared in class, do not allow children with visibly active cold sores, severely chapped lips or upper respiratory infections to use mouthpieces or instruments.
- **Disinfect mouthpieces and instruments regularly.** Disinfectants that can be used on mouthpieces and instruments include:

1. Combination synthetic phenolics are a type of non-corrosive, non-irritating, odorless compounds that won't damage most metals and plastics. Some products may leave a sour taste and may damage or discolor clothing.
2. Buffered chlorine products will disinfect without corroding metals. It may be a skin and eye irritant and leave a strong chlorinated odor and taste. It can damage and discolor clothing.
3. Quaternary ammoniums are widely used as disinfectants as they are non-corrosive, odorless, tasteless and are extremely effective at killing microorganisms. They have the greatest safety profile among the many existing disinfectants.

Other potential disinfectants, including alcohol, boiling water and household bleach, are NOT recommended for disinfecting mouthpieces or instruments because of their deleterious effect on human skin, plastics and/or metals.

More detailed instructions for the disinfection of musical instruments can be found at the following webpage:

<http://dhh.louisiana.gov/assets/oph/Center-PHCH/Center-CH/infectious-epi/EpiManual/ICMusicalInstruments.pdf>

## **SPORTS & ATHLETICS**

The spread of communicable disease is a particularly unique concern for students participating in sporting activities (hereby referred to as “athletes”), due to the enhanced likelihood of direct contact, communal sharing of food and water, and the combination of public gatherings with intimate proximity between persons often generated by sporting activity. As such, athletes are considered “high risk” for disease transmission.

Transmission of infections during athletics usually occurs via direct skin-to-skin contact, airborne and/or droplet spread, and the fecal-oral route via a common source exposure. The most common mode of transmission in outbreaks among athletes involves direct person-to-person, usually skin-to-skin, contact. The percutaneous transmission of bloodborne diseases via abrasions or open wounds is very rare, although precautions should always be taken to prevent the spread of such diseases.

In many cases, transmission of disease is unavoidable due to an undetected contagious period prior to any symptoms, as is the case with certain respiratory illnesses. In other cases, disease transmission is absolutely preventable and consists of implementing rules regarding personal hygiene, sharing certain equipment, wearing clean athletic gear, bandaging of wounds, and quarantining ill athletes from sport participation.

### **What are the best measures to prevent the spread of disease among athletes?**

It is essential that school staff responsible for the health and safety of athletes, including coaches, trainers, associated athletic staff, and school nurses, be aware of the potential for the spread of infection during physical education activities and during training and competition in team sports. They should not only be able to recognize and manage acute problems, but should also institute policies for the prevention of disease transmission among athletes. These policies should include, but not be limited to, the following recommendations:

- All athletes should have the required and recommended immunizations prior to the commencement of group sporting activity. See the list of immunizations required by Louisiana law (page 13).
- Athletes with symptoms of an infectious disease should not be permitted to participate in sports activities until they have been evaluated by their health care provider and are no longer infectious.
- Players with open lesions and infectious skin conditions that cannot be adequately protected should be considered for medical disqualification from practice or competition. “Adequately protected” means that the lesion or skin condition has been deemed non-infectious, has been adequately treated by a health care provider, and can be properly covered with a securely attached bandage/dressing that will contain all drainage and will remain intact throughout the sport activity.
- Athletes should be strongly discouraged from sharing personal sports equipment and gear (such as uniforms, shoulder pads, and mouth guards, among others), personal hygiene products, towels and water bottles.
- All athletic equipment in contact with student's skin or secretions should be routinely cleaned after use. This includes, for example, gymnastic and wrestling mats, shoulder pads, and other protective equipment.
- If injuries or abrasions with bleeding occur during an athletic activity, athletes must leave the field of play, be given appropriate medical treatment, and should not return to the game without approval of medical personnel.
- **The Office of Public Health should be immediately notified of a case or a suspected case of a reportable disease in an athlete.** The timely reporting of a suspected case of an infectious disease may help to prevent further spread among athletes, spectators, and the community.

### **SPECIAL GROUPS SUSCEPTIBLE TO INFECTION**

Wrestlers and football players are at an enhanced risk of skin and soft tissue infections due to the “gladiatorial” nature of their sport and the extensive skin-to-skin contact between athletes. It is estimated that less than 10% of all injuries and conditions related to high school athletics involve skin and soft tissue infections.

Examples of infections and outbreaks that have occurred among these particular athletes include such diseases as impetigo, ringworm, herpes simplex virus (HSV), methicillin-resistant *Staphylococcus aureus* (MRSA), and strains of *Streptococcus*.

These infections most commonly manifest on the face and extremities and the **most common risk factors** are as follows:

- Shaving
- Communal sharing of bar soap
- Exposed turf burns and abrasions
- Chafing from uniforms and equipment
- Sharing of towels and equipment between athletes
- Prolonged physical contact between athletes
- Not showering before using shared equipment

As previously mentioned, it is of the utmost importance to have guidelines in place regarding personal hygiene, to be aware of active infections among participating athletes, and to restrict sharing of personal equipment and gear.

More detailed information on methicillin-resistant *Staphylococcus aureus* (MRSA) for athletes and coaches can be found at the following webpage:

<http://dhh.louisiana.gov/assets/oph/Center-PHCH/Center-CH/infectious-epi/AntibioticSensitivity/PublicInfoABMRSA/MRSAFactSheetforAthletesandCoaches.pdf>

More detailed information on preventing transmission of MRSA infections and controlling MRSA outbreaks among can be found at the following webpage:

[http://dhh.louisiana.gov/assets/oph/Center-PHCH/Center-CH/infectious-epi/MRSA/StaphMRSA\\_Sports.pdf](http://dhh.louisiana.gov/assets/oph/Center-PHCH/Center-CH/infectious-epi/MRSA/StaphMRSA_Sports.pdf)

# **SYMPTOMS OF ILLNESS**

## **SYMPTOMS OF CONCERN**

The role of school staff in monitoring and assessing the health of students is important in maintaining good community health within the school community. Teachers and school staff are at an excellent vantage point to detect early physical and behavioral changes that differ from the usual pattern for a particular student and they should be trained to note any symptoms of illness.

Some frequent symptoms of concern that may indicate a serious condition and should be monitored by school staff are:

- Unusual or noticeable change in general appearance
- Unusual or noticeable change in behavior (e.g. student is irritable, fatigued, or appears to be in discomfort)
- Headache
- Fever (e.g. a temperature of over 101°F measured orally)
- Breathing difficulties
- Severe coughing (e.g. student becomes red or blue in the face, makes high-pitched croupy or whooping sound after coughing, has coughing “fits”, or vomits after coughing)
- Discolored eyes (e.g. bloodshot, watering or discharge from the eye)
- Unusual skin or eye color (e.g. yellowish or blanched skin)
- Unusual spots or rashes
- Infected skin lesions (e.g. lesions that appear crusty, bright yellow, or excessively moist)
- Frequent scratching of the scalp or skin
- Loss of appetite
- Sore throat or trouble swallowing
- Vomiting
- Dark, tea-colored urine
- Change in bowel habit (e.g. diarrhea or constipation)
- Unusual stool color (e.g. is gray or white, or contains blood or mucus)

Parents should be notified when a student develops symptoms at school; the student should be referred to a health care provider if symptoms are thought to be serious.

The table on the following page - Table I: Common symptoms in ill children - lists symptoms that could possibly be related to an infectious disease in a child and the criteria in which it might be necessary to exclude a student from school. The criteria for readmission to school are also included. See exclusion guidelines to determine whether exclusion should be considered if a certain symptom or illness is present.

Most minor illnesses do not require a child’s exclusion from the school setting. Exclusion and readmission to school requires a logical assessment of the seriousness of the presenting symptoms and the discomfort of the child and its fellow students.

**Table I: Common symptoms in ill children.**

Presenting symptoms, additional complaints, and criteria for exclusion from and readmission to school are included.

SYMPTOM	ADDITIONAL COMPLAINTS	EXCLUSION CRITERIA	READMISSION CRITERIA
<b><u>Common cold</u></b>	<ul style="list-style-type: none"> <li>• Fever</li> <li>• Sore throat</li> <li>• Runny or stuffy nose</li> <li>• Sneezing</li> <li>• Coughing</li> <li>• Watery eyes</li> <li>• Conjunctivitis</li> </ul>	<ul style="list-style-type: none"> <li>• Fever accompanied by behavior change</li> <li>• Appears or acts very ill</li> <li>• Breathing difficulties</li> <li>• Existence of blood-red or purple rash apparently not associated with trauma</li> </ul>	Exclusion criteria are resolved
<b><u>Conjunctivitis (pinkeye)</u></b>	<ul style="list-style-type: none"> <li>• Fever</li> <li>• Purulent discharge</li> <li>• Eye itchiness or burning</li> <li>• Eye swelling</li> <li>• Light sensitivity</li> </ul>	<ul style="list-style-type: none"> <li>• Purulent discharge</li> </ul>	<p>Exclusion criteria are resolved</p> <p>On medication (if indicated) at least for 24 hours</p>
<b><u>Cough</u></b>	<ul style="list-style-type: none"> <li>• Dry, productive, whooping or barking cough</li> <li>• Runny or stuffy nose</li> <li>• Sore throat</li> <li>• Hoarse voice</li> </ul>	<ul style="list-style-type: none"> <li>• Rapid, forced or difficulty/change of breathing</li> <li>• Severe, uncontrolled cough</li> <li>• Cyanosis</li> <li>• Wheezing</li> </ul>	Exclusion criteria are resolved
<b>Diarrhea</b> (stools are more frequent and looser than usual)	<ul style="list-style-type: none"> <li>• Fever</li> <li>• Stomach ache or abdominal cramps</li> <li>• Vomiting</li> </ul>	<ul style="list-style-type: none"> <li>• The diarrhea cannot be contained in a toilet.</li> <li>• Presence of blood or mucus in the stool</li> <li>• Unusual stool color (very pale, all black or deep green) and change in odor</li> <li>• Additional symptoms present such as vomiting, fever, abdominal pain, etc</li> </ul>	<p>When symptoms subside</p> <p>Stool is contained in diapers or the toilet</p>
<b>Earache</b>	<ul style="list-style-type: none"> <li>• Fever</li> <li>• Purulent or bloody discharge</li> </ul>	<ul style="list-style-type: none"> <li>• Unable to participate in school activities</li> <li>• Additional symptoms present such as purulent or bloody discharge from ear</li> </ul>	Exclusion criteria are resolved

<b>Fever</b> (temperature over 101°F orally)		<ul style="list-style-type: none"> <li>• Fever alone does not require exclusion</li> <li>• Additional symptoms present such as a rash, sore throat, vomiting, diarrhea, etc</li> </ul>	Exclusion criteria are resolved
<b>SYMPTOM</b>	<b>ADDITIONAL COMPLAINTS</b>	<b>EXCLUSION CRITERIA</b>	<b>READMISSION CRITERIA</b>
<b>Headache</b>	<ul style="list-style-type: none"> <li>• Behavior change – is tired or irritable</li> <li>• May be accompanied by other symptoms such as fever, nausea/vomiting, stiff neck, etc</li> </ul>	<ul style="list-style-type: none"> <li>• No exclusion is necessary for headache alone.</li> <li>• Nevertheless, close observation should be exercised</li> </ul>	Able to participate in school activities and exclusion criteria are resolved
<b>Mouth sores</b>	<ul style="list-style-type: none"> <li>• White or yellowish spots and patches in the mouth, on tongue or along the cheeks</li> <li>• Painful swallowing, swollen neck glands or lips</li> </ul>	<ul style="list-style-type: none"> <li>• Uncontrollable drooling</li> <li>• Needs more care than personnel can provide</li> <li>• Unable to participate in school activities</li> </ul>	Able to participate in school activities and exclusion criteria are resolved
<b>Rash</b>	See more information on rashes below	<ul style="list-style-type: none"> <li>• Additional symptoms present such as behavioral changes, fever, joint pain, or bruising not associated with injury, or if the rash is oozing or causes open wounds</li> </ul>	<p>Able to participate in school activities and exclusion criteria are resolved</p> <p>On medication (if indicated) at least for 24 hours</p>
<b>Stomach ache / abdominal pain</b>	<ul style="list-style-type: none"> <li>• Fever</li> <li>• Abdominal pain</li> <li>• Abdominal cramps</li> <li>• Nausea/vomiting</li> <li>• Diarrhea</li> </ul>	<ul style="list-style-type: none"> <li>• Pain is severe</li> <li>• Pain appears after an injury</li> <li>• Additional symptoms present such as such as fever, vomiting, diarrhea, etc</li> </ul>	Able to participate in school activities and exclusion criteria are resolved
<b>Swollen lymph nodes</b>	<ul style="list-style-type: none"> <li>• Fever</li> <li>• Common cold symptoms</li> <li>• Swelling at front and/or sides of neck</li> <li>• Swollen lymph nodes in groin or armpits</li> <li>• Boils or redness</li> </ul>	<ul style="list-style-type: none"> <li>• Additional symptoms present such as difficulty breathing, swallowing, fever, etc</li> </ul>	<p>Able to participate in school activities and exclusion criteria are resolved</p> <p>On medications (if indicated) at least for 24 hours</p>

<b>Vomiting</b>	<ul style="list-style-type: none"> <li>• Nausea</li> <li>• Abdominal pain</li> <li>• Abdominal cramps</li> <li>• Diarrhea</li> </ul>	<ul style="list-style-type: none"> <li>• Vomiting occurred more than two times in 24 hours</li> <li>• Vomit appears green, black or bloody.</li> <li>• A recent head injury occurred</li> <li>• Additional symptoms present such as fever, diarrhea, etc</li> </ul>	Able to participate in school activities and exclusion criteria are resolved
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## **RASHES**

A rash is a temporary eruption or change in the color of the skin that may often be inflamed or swollen. Rashes can have many different causes, come in many forms and levels of severity, and can last for varying amounts of time. They may cause discomfort or pain, as well as embarrassment. Some rashes may clear up on their own while others necessitate medical treatment.

Generally, a rash can be a symptom either of a contagious or non-contagious disease. Examples of non-contagious rashes include:

- **Eczema** is a chronic hypersensitivity reaction in the skin and can cause a scaly and itchy rash.
- **Heat rash** is caused by heat exposure or overheating when the flow of sweat is obstructed. Otherwise known as “prickly heat,” it is commonly caused by dressing warmly in hot and humid climates and the condition is especially prevalent in the summer months.
- **Contact dermatitis** is an inflammation of the skin caused by direct contact with an irritating substance. A type of allergic reaction, it can occur following an exposure to dyes and chemicals found in clothing, chemicals found in elastic and rubber products, cosmetics, poison ivy, and poison oak. This type of rash usually occurs where the irritating agent touches the skin.
- Medications, foods, or insect bites that cause allergic reactions can also cause a rash known as **allergic dermatitis**.

The table on the following two pages - Table II: Infectious diseases that can cause rashes in children - lists the different types of rashes caused by disease, including their appearance, bodily distribution, presence of itching, along with the criteria in which it might be necessary to exclude a student from school.

Exclusion from school depends largely on the contagiousness and severity of a student’s rash as well as the discomfort and embarrassment that it causes to the student. See Table I to determine whether exclusion should be considered if a certain symptom or illness is present.

Table III: Images of common rashes in children – is intended to be used as a resource to assist in a basic assessment of a presenting rash. Parents should always be notified when a student develops a rash at school. The student should be referred to a health care provider if the rash is thought to be indicative of a serious illness.







**Table II: Infectious diseases that can cause rashes in children.**

The disease, typical presenting appearance, its distribution on the body, whether it causes itching and additional comments and possible exclusion criteria are included.

DISEASE	APPEARANCE OF RASH	DISTRIBUTION	ITCHING	COMMENTS & EXCLUSION CRITERIA
<b>BACTERIAL</b>				
<b>Impetigo</b> (Staphylococcus aureus)	Small blisters that burst to reveal red skin. May leave yellowish-brown crust.	Usually the face, around the nose and mouth, but can occur anywhere.	Yes	Exclude until 24 hours of appropriate treatment.
<b>Scarlet fever</b> (Group A streptococci, scarlatina)	Small red bumps. Red turns white on pressure. Pigmented areas in skin creases.	Begins on neck and groin, spreads to rest of body.	No	Strep throat symptoms are present. Exclude until 24 hours of appropriate treatment.
<b>VIRAL</b>				
<b>Chickenpox</b> (Varicella)	Blister-like rash that scabs over.	More abundant on trunk than extremities.	Yes	<i>Highly contagious.</i> Immunization available. Exclude until blisters scab over.
<b>Duke's Disease</b> (Enterovirus, ECHO- and Coxsackieviruses, Fourth Disease)	Flat to bumpy red rash with areas of confluence. May look like hives, blisters or red spots under the skin.	Usually generalized; occasionally palms and soles.	Sometimes	No exclusion necessary.
<b>Fifth Disease</b> (Erythema infectiosum, human parvovirus)	Red cheeks that look as if slapped. Red, lace-like rash. May fade and then reappear.	Begins on cheeks, spreads to trunk and extremities.	Slight, if any	No exclusion necessary.
<b>Hand-Foot-Mouth Disease</b> (Viral exanthema)	Small blister-like sores	Hands, feet, mouth and occasionally buttocks.	No	No exclusion necessary.
<b>Measles</b> (Rubeola, morbilli)	Bumpy, blotchy red to purplish rash. Rash turns white on pressure.	Begins on face, spreads to trunk and extremities.	Slight, if any	<i>Highly contagious.</i> Immunization is available. Exclude for 5 days after rash onset.
<b>Molluscum contagiosum</b> (Water warts)	Smooth small pearly, red or flesh-colored raised bumps with a dimple in the center.	Face, neck, armpit, arms, and hands but may spread to entire body.	Yes	<i>Highly contagious.</i> No exclusion necessary but covering of rash with clothing or bandage is strongly recommended.







<b>Roseola</b> (Sixth disease, Exanthema subitum, rose rash of infants, three-day fever)	Small, discrete pink spots. Almond shaped flat spots appear on trunk and neck.	Begins on chest and abdomen, spreads to entire body.	No	Most common in children 6 to 24 months of age. No exclusion necessary in most cases.
<b>DISEASE</b>	<b>APPEARANCE OF RASH</b>	<b>DISTRIBUTION</b>	<b>ITCHING</b>	<b>COMMENTS &amp; EXCLUSION CRITERIA</b>
<b>Rubella</b> (German measles)	Small pink spots. May become confluent but remains pink.	Begins on face, spreads to neck, trunk and extremities.	No	Immunization is available. Exclude for 7 days after rash onset.
<b>Shingles</b> (Herpes zoster)	Blister-like rash that scabs over. Painful in affected area.	A single area of skin.	Sometimes	Reactivation of the chickenpox virus. No exclusion necessary if blisters are covered.
<b>FUNGAL</b>				
<b>Ringworm</b> (Athletes foot, jock itch, tinea)	Small red bump that spreads outward in a general ring shape.	A single area of skin.	Yes	No exclusion necessary.
<b>PARASITIC</b>				
<b>Scabies</b>	Small, scattered, red itchy spots and occasionally lines.	Mostly in the web of the fingers and areas of the thighs and arms.	Yes Most severe at night	Exclude until the day after treatment.
<b>Swimmer's itch</b> (Cercarial dermatitis, lake itch)	Small, red pimples or blisters.	On areas of the body exposed to fresh or salt water and not covered by a swimsuit.	Yes	No exclusion necessary.

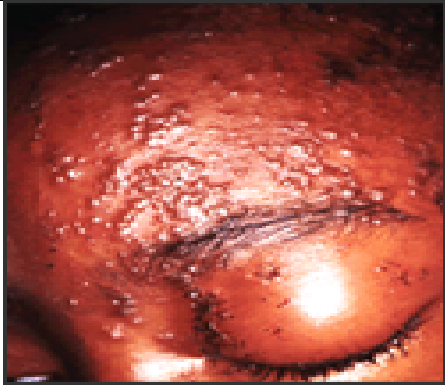
**Table III: Images of common rashes in children.**

<b>BACTERIAL ORGANISMS</b>	
<b>Impetigo (<i>Staphylococcus aureus</i>)</b>	
	 Source:
Source: Bernard Cohen, DermAtlas.	Sugathan Paramoo, DermAtlas.
<b>Scarlet fever (Group A <i>Streptococcus</i>)</b>	
	
Source: Alicia Williams, Wikipedia Commons	Source: Alicia Williams, Wikipedia Commons
<b>VIRAL ORGANISMS</b>	
<b>Chickenpox (<i>Varicella zoster virus</i>)</b>	
	
Source: CDC/Immunization Action Coalition	Source: CDC/Immunization Action Coalition

VIRAL ORGANISMS	
Fifth Disease (Parvovirus B19)	
	
Source: CDC	Source: CDC
Hand-Foot-Mouth Disease (Coxsackie A virus or enterovirus 71)	
	
Source: G Oger, Wikipedia Commons	Source: Dr. David Midgley, Wikipedia Commons
Measles (Measles virus)	
	
Source: CDC	Source: Mike Blyth, Creative Commons



VIRAL ORGANISMS	
Water warts ( <i>Molluscum contagiosum</i> virus)	
	
Source: E van Herk, Wikipedia Commons	Source: E van Herk, Wikipedia Commons
Roseola (human herpesvirus 6 or 7)	
	
Source: Emiliano Burzagli, Wikipedia Commons	Source: Emiliano Burzagli, Wikipedia Commons
Rubella	
	
Source: CDC	Source: CDC

<b>VIRAL ORGANISMS</b>	
<b>Shingles (Herpes varicella zoster)</b>	
 <p>Source: CDC</p>	 <p>Source: James Heilman, Wikipedia Commons</p>
<b>FUNGAL ORGANISMS</b>	
<b>Ringworm (Various fungal species)</b>	
 <p>Source: CDC/Dr. Lucille K. Georg</p>	 <p>Source: CDC/Dr. Lucille K. Georg</p>
<b>PARASITIC ORGANISMS</b>	
<b>Scabies (Sarcoptes scabiei)</b>	
 <p>Source: CDC/ J. Pledger</p>	 <p>Source: Cixi, Wikipedia Commons</p>

## PARASITIC ORGANISMS

### Swimmer's itch (Cercarial dermatitis, lake itch)



Source: CDC



Source: Cornellier, Wikipedia Commons



# OUTBREAKS & SPECIAL CASES UNIQUE TO THE SCHOOL ENVIRONMENT

## **OUTBREAKS**

Outbreaks of infectious disease that affect both children and adults are not uncommon in school settings and are occasionally the result of factors unique to the environment and the community. This section outlines some of the most commonly seen organisms responsible for disease outbreaks and offers guidelines on how their prevention and control.

**Suspected outbreaks must be reported to the Office of Public Health within 24 hours.**

**To report an outbreak, call**

**(504) 568-8313 or (800) 256-2748**

## **HEAD LICE**

Pediculosis is an infestation with head lice. Lice can be found residing in the hair on the head, near the nape of the neck and behind the ears. Head lice outbreaks can be a common occurrence in schools affecting six to 12 million children a year with outbreaks typically occurring in the early fall. Infestation with head lice is not influenced by hair length, by frequency of hair brushing or shampooing.

### **How is it transmitted?**

Transmission occurs by direct head-to-head contact with the hair of infested people or through indirect contact with personal belongings, such as brushes and hats. The presence of a single live crawling adult lice indicates an ongoing infestation whereas the discovery of only the lice eggs, known as “nits,” does not in itself justify treatment.

### **Who is at risk?**

Children enrolled in daycares, elementary school and their associated household contacts are at the greatest risk for head lice infestation.

### **How to control an outbreak?**

- Notify parents/guardians of children with a suspected infestation that their child must be treated with pediculicidal agents. Inform them that household contacts should be examined and treated if infested.
- Children should not be excluded nor sent home early from school because of head lice provided that the child will have NO head-to-head contact with classmates. If compliance is in doubt, exclude the child until a day after treatment.
- Instruct the parents/guardians of classmates and potentially exposed contacts to check for evidence of infestation.
- Vacuum carpets and furniture of affected classrooms. Do not use fumigant sprays.
- Avoid playtime activities that may result in close person-to-person contact which can enhance the risk of head lice transmission.

- Prophylactic treatment of non-infested people is not recommended.

### **How to prevent an outbreak?**

Head lice are so prevalent that most schools in Louisiana have children with an infestation every year. Because this infestation is so common in the population of school children, it can be difficult to prevent cases and outbreaks of head lice. The aim of school staff must be to control the spread of head lice through education and ensuring that parents/guardians treat their children with the appropriate pediculicidal agents.

Many schools have adopted a “no nit” policy to control head lice outbreaks. However, these policies have been shown to be ineffective in controlling head lice transmission and are not recommended.

## **PINWORMS**

Pinworms are small parasitic worms that cause an intestinal infection. Pinworm infections can affect people from all socioeconomic levels without regard to age, sex, race, or standards of personal hygiene.

### **How is it transmitted?**

While an infected person sleeps, female pinworms leave the intestine through the anus and deposit thousands of eggs on the surrounding skin. People become infected via the fecal-oral route, by ingesting pinworm eggs that are on the fingers and hands, or via contamination of clothing, bedding, objects and surfaces.

### **Who is at risk?**

Preschool-aged children, their primary caregivers and household contacts are at the greatest risk for pinworm infections. Infections are particularly common in families with small children.

### **How to control an outbreak?**

- Notify parents/guardians of children with symptoms of pinworm infection. Inform them that household and other house contacts should be examined and treated if infected. Recommend that their children’s fingernails be trimmed short to reduce the likelihood of re-infection.
- Children should not be excluded or sent home early from school because of pinworm infections.
- Instruct the parents/guardians of classmates and potentially exposed contacts to check for evidence of infection.
- Implement regular hand washing within affected classrooms.
- Shared toys, play equipment and communal surfaces within an affected classroom should be disinfected. If there are carpets, they should undergo steam cleaning.
- Prophylactic treatment of non-infected people is not recommended.

### **How are pinworm outbreaks prevented?**

Control of outbreaks can be difficult in childcare centers and schools as the incubation period can be as long as two months, the rate of re-infection is very high and the pinworms eggs can survive for long periods in the environment. Good hand hygiene is the most effective method of

prevention. This includes washing hands before eating or preparing food, after using the toilet and after changing a diaper. Other recommended methods of outbreak prevention include trimming children's fingernails short, discouraging children from indulging in nail biting behaviors and scratching the skin around the anus.

## **CONJUNCTIVITIS**

Conjunctivitis, commonly known as “pink eye,” is an inflammation of the outermost layer of the eye that can be caused by microbial organisms, allergies or contact with toxic substances. Infective conjunctivitis is caused by many different bacteria and viruses, although bacteria are most commonly implicated and can cause highly contagious infections. An outbreak of conjunctivitis consists of at least three cases of conjunctivitis within a week in a group of persons who share a common exposure outside of a common household (i.e. an outbreak does not solely include a group of family members). Outbreaks of conjunctivitis among school-age children most commonly occur during the summer and early fall.

### **How is conjunctivitis transmitted?**

Transmission of conjunctivitis relies on close person-to-person contact, indirect contact by contaminated objects and surfaces, and droplets from coughing or sneezing. Persons can become infected when their hands become contaminated with eye discharge, nasal secretions or from respiratory droplets and then subsequently rub their eyes. Outbreaks occur in patterns similar to the spread of respiratory infections, such as colds and influenza.

### **Who is at risk?**

School staff, school-aged children, their primary caregivers and household contacts are at risk for conjunctivitis infection.

### **How to control an outbreak?**

- Notify parents/guardians of children with symptoms of conjunctivitis. Inform them that household and other house contacts should be examined and treated if infected.
- Infected or symptomatic children should be excluded for at least 24 hours after initiation of appropriate treatment or until resolution of symptoms.
- Implement regular hand washing within affected classrooms.
- Strongly discourage eye rubbing and touching.
- Encourage children to cover their mouths when coughing and sneezing, which should be followed by handwashing.
- Shared toys, play equipment and communal surfaces within an affected classroom should be disinfected.
- Avoid playtime activities that may result in close person-to-person contact which can enhance the risk of conjunctivitis transmission.
- Prohibit personal belongings (i.e., clothing and cosmetics) from being shared between students.
- Prophylactic treatment of non-infected people is not recommended.

### **How are outbreaks prevented?**

Infectious conjunctivitis is easily transmitted and incredibly contagious. Due to the close contact between children and adults in a school setting, it can be difficult to prevent and control

outbreaks. Prevention of infective conjunctivitis relies largely upon good personal hygiene. It is imperative that school staff implement measures that allow for infected and potentially exposed students to frequently engage in handwashing. Disinfection of commonly used surfaces in the classroom is also strongly advised.

## **SCABIES**

Scabies is a skin infestation caused by parasitic mites. The infestation can cause a red rash consisting of raised papules and burrowing lines localized to the webbing between the fingers and areas of the thighs and arms. Scabies infestation can affect people from all socioeconomic levels without regard to age, sex, race, or standards of personal hygiene.

### **How is it transmitted?**

Transmission occurs through prolonged and close person-to-person contact with an infested person. An infested person can transmit scabies even in the absence of any symptoms. When a person is infested with scabies for the first time, symptoms may not appear for up to two months. A person is able spread scabies until the mites and their eggs are destroyed by treatment, typically with a scabicide lotion or cream. Shared clothing and personal belongings are rarely implicated in the spread of scabies.

### **Who is at risk?**

Household contacts and those living in institutionalized settings are at the greatest risk of contracting scabies.

### **How to control an outbreak?**

- Infested or symptomatic children should be excluded until the appropriate medical treatment has been completed. Itching may persist for one to two weeks and should not be regarded as a treatment failure or re-infestation. However, some cases do require a second course of treatment.
- Avoid playtime activities that may result in close person-to-person contact which can enhance the risk of scabies transmission.
- Prophylactic treatment of close contacts (i.e., playmates, family members) is strongly recommended.

### **How are outbreaks prevented?**

A scabies outbreak suggests that transmission has been occurring within the institution for several weeks to months, indicating that some infested children or staff have spread scabies elsewhere in the community.

Control measures for multiple cases of scabies should consist of medical confirmation of a diagnosis of scabies, early and complete treatment and follow-up of all suspected cases, and heightened surveillance to ensure early detection of new cases. Educating the parents/guardians and school staff on the life cycle of scabies and ensuring that infested individuals and close contacts are properly treated is extremely important in controlling and preventing outbreaks.

## **NOROVIRUS**

Norovirus is a type of acute gastrointestinal infection that causes vomiting and diarrhea. Infection with the virus is usually brief with symptoms lasting only one to two days. While the disease is usually not serious, people may feel very ill due to the severity of symptoms. Outbreaks of norovirus can be a common occurrence in the community as the virus is very contagious and spreads easily from person-to-person.

### **How is it transmitted?**

Transmission often occurs through the fecal-oral route, although aerosolization of vomit resulting in airborne and fomite transmission is common during outbreaks. Frequently during an outbreak, primary cases result from a common source exposure to a fecally-contaminated vehicle such as food or water, which is then followed by cases among close contacts resulting from person-to-person transmission.

### **Who is at risk?**

Norovirus is ubiquitous and extremely contagious. Any people who come into contact with a person infected with norovirus are at risk of acquiring the infection.

### **How to control an outbreak?**

- Notify parents/guardians of children with symptoms of gastrointestinal infection.
- Infected or symptomatic children should be excluded until resolution of symptoms (e.g. diarrhea and vomiting). Once illness ends, children can return, but handwashing must be strictly monitored.
- Implement regular handwashing within affected classrooms.
- Shared toys, play equipment and communal surfaces within an affected classroom should be disinfected. If there are carpets, they should undergo steam cleaning.

### **How are outbreaks prevented?**

Norovirus is a hardy virus, extremely persistent in the environment and able to resist disinfection and chlorination. The infectious dose of the virus is also very low, which increases the risk of infection among groups of people with close contact and in enclosed environments. Early detection and treatment of cases, and implementation of infection control practices and exclusion of the infected are essential in preventing norovirus outbreaks. Prevention of norovirus illness relies largely upon good personal hygiene. It is imperative that school staff implement measures that allow for students to frequently engage in handwashing.

## **SPECIAL CASES**

The school setting and the large presence of children of variable ages and maturity levels results in special cases and situations unique only to school environments. This section outlines a common situation – human biting incidents - seen in the school environment that may result in infections and disease and offers guidelines on the management of such incidents.

## **HUMAN BITING INCIDENTS**

It is not uncommon for a young child to bite another child during play activities or in anger and, as a result, biting incidents can be a frequent occurrence in child care settings and in elementary schools. Most bites do not break the skin and are generally considered to be harmless.

However, when a bite does break the skin, there are risks of infection to both the victim, “the bitten,” and the offending biting aggressor, the “biter.” Human saliva contains numerous microbial organisms that can lead to an infection of a wound resulting from a human bite. Additionally, if saliva contains blood from bleeding gums or an injury, bloodborne infections may also be transmitted to the bitten victim.

Conversely, children or adults with bloodborne diseases who are the victims of a biting incident may also transmit infections to the biter if the skin is broken. In this incidence, the victim of a biting would be considered the “source” of an infection to the biter.

### **The possible infection risks from human bites are,**

- Bacteria including *Clostridium tetani* (tetanus), *Staphylococcus* species, *Streptococcus* species, *Prevotella* species, *Fusobacterium* species, *Haemophilus* species, *Bacteroides* species and many others.
- Viruses such as hepatitis B, hepatitis C and HIV/AIDS.

While it is possible that HIV can be transmitted by a human bite, it is extremely unlikely. For HIV to be transmitted to a bitten victim, the person who is infected would have to be bleeding, break the skin of the person he is biting, and bleed into the wound. For HIV to be transmitted to a biter, the bite would need to break the skin of the infected person and introduce blood into abrasions within the mouth. There are no reported cases of HIV transmission through a human bite without blood-to-blood contact and **the potential risk of HIV infection following a human bite, although biologically possible, is an extremely rare event.**

Following a biting incident, school staff and parents/guardians may request the bloodborne virus infection status of the children involved. However, **such an incident does not justify breaches in the confidentiality of medical information.** It is crucial that concern for a potentially exposed child is balanced by the dignity and right to privacy of the infected child.

### **In the event of a biting incident in which the skin is not broken:**

- Simply wash the area with mild soap and water.
- Notify the parents/guardians so that medical advice and treatment can be sought.
- Advise the parents/guardians to watch their children for signs and symptoms of any infection.

### **In the event of a biting incident in which the skin is broken,**

- Encourage the wound to bleed and irrigate with warm running water or normal saline for three to five minutes. Do not scrub the wound. Cover with a clean bandage. If the wound is bleeding, apply pressure with a clean dry cloth and elevate the area if possible.
- Notify the parents/guardians immediately so that medical advice and treatment can be sought.